AEC-NASA TECH BRIEF

Computerized Parts List System Coordinates Engineering Releases, Parts Control, and Manufacturing Planning

The problem:

Complex new systems currently being developed consist of many parts and assemblies. Keeping accurate records of the engineering releases required for such systems is an important but difficult task. To ensure a high level of product reliability, the paperwork system must be flexible, accurate, and timely.

The solution:

A computerized parts list system developed to compile and summarize all pertinent and available information.

How it's done:

The parts list system consists of three computer subroutines: (a) a list of parts; (b) a parts numerical sequence list; and (c) a specifications list. The parts list is arranged in indented format, showing all detail parts in proper relation to subassembly and assembly drawings. Total parts quantity control is achieved through the numerical sequence list, which can also locate all of the assemblies using a particular part. Through the specifications list, material and process control is also achieved since part numbers and specifications can be correlated. Examples of these subroutines are shown on the overleaf.

During the engineering phase, the system can be used to show partial releases, to release individual components even before their higher assembly drawings are released, and to generally administer the total drawing release program.

Manufacturing also benefits since the computer-stored data serves as a base line for procurement and manufacturing without experiencing errors associated with information transcription. Sufficient capacity exists to permit the insertion of manufacturing-unique data and to allow a continuing check on action taken against engineering releases.

Notes:

1. The computer code is not a part of this Tech Brief since each application will determine the required code.
2. Inquiries concerning this innovation may be directed to:

   Technology Utilization Officer
   AEC-NASA Space Nuclear Propulsion Office
   U.S. Atomic Energy Commission
   Washington, D.C. 20545
   Reference: B67-10348

Patent status:

No patent action is contemplated by AEC or NASA.

Source: William Horton and Marilyn Kinsey
of Westinghouse Astronuclear Laboratory
under contract to
AEC-NASA Space Nuclear Propulsion Office
(NUC-10073)

(continued overleaf)

LIST OF SPECIFICATIONS

SPEC NUMBER	REV ECO PART NUMBERS	SPEC DESCRIPTION PART DESCRIPTION
E675441	F 13,480	STRAIN GAGE, WELDABLE
E675441	978D802H02	STRAIN GAGE
E675441	978D802H03	STRAIN GAGE
E675441	978D803H02	STRAIN GAGE

LIST OF PARTS

SEQUENCE NUMBER	LEVEL	PART DESCRIPTION	PART NUMBER	NEXT HIGHER ASSEMBLY QUANTITY	NEXT HIGHER ASSEMBLY PART NUMBER	RELEASE NUMBER
1000	A	CONTROL ROD MECHANISM	787J167G01	1		9314
1100	B	ROD ASSEMBLY	366E231G01	5	787J167G01	9277
1110	C	ROD GUIDE	437D619H05	1	366E231G01	9229
1120	C	COUPLING	1-16-66	1	366E231G01	
1130	C	SEAL	124A630H01	2	366E231G01	9306

NUMERICAL SEQUENCE LIST

REACTR CODE	ASSY CODE	SEQ NUM	LEVEL	PART DESCRIPTION	PART NUMBER	NHA QTY	RELEASE NUMBER	GROUP QUANTITY	NHA PART NUMBER
1	1	1120	C	COUPLING	1-16-66	1		5	366E231G01
1	1	1240	C	COUPLING	1-16-66	1		5	366E252G01
CORE SUBASSEMBLY			TOTAL ENTRIES =	2 FOR PART NUMBER	1-16-66		TOTAL REQUIRED = 10		
TOTALS FOR			TOTAL ENTRIES =	2 FOR PART NUMBER	1-16-66		TOTAL REQUIRED = 10		
1	1	1130	C	SEAL	124A630H01	2	9306	10	366E231G01
1	1	1250	C	SEAL	124A630H01	3	9306	15	366E252G01
CORE SUBASSEMBLY			TOTAL ENTRIES =	2 FOR PART NUMBER	124A630H01		TOTAL REQUIRED = 25		

Examples of Subroutines of Parts List System